

Docket No. DLD-01

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s) : Dennis L. Domann
Serial No. :
Filed :
For : APPARATUS FOR LIFTING, MOVING AND
PLACING ODD-SHAPED OBJECTS

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INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner
for Patents
Washington, D.C. 20231

SIR:

In keeping with the duty of candor and good faith owed to the U.S. Patent and Trademark Office, applicant wishes to make of record the items on attached PTO Form 1449. A copy of each item is provided in accordance with 37 CFR 1.98.

U.S. Pat. No. 2,717,704 to Pilch discloses a material handling device 10 which includes upright supports 14 which extend above a frame at substantially midpoints of a tractor and push arms 15 pivotally mounted to supports 14 at 16. Each push arm 15 has a bracket 17 secured thereto and to which an end of a piston rod 18 is pivotally connected. The piston rod 18 has a piston thereon in cylinder 19 which is pivotally connected at 20 to the tractor frame. Uprights 21 are also provided on the tractor frame. An arm 22 is pivotally mounted at upper ends of the uprights 21. A lever 23 is pivotally mounted to arm 22. The lever 23 is pivotally connected to arm 22 at 24. The lever 23 has cylinder 25 pivotally connected thereto at 26 adjacent one end thereof and link 27 pivotally connected thereto at 28 adjacent its opposite end. In cylinder 25 is a piston connected to piston rod 29 adapted to actuate claw 30. On the forward end of push arms 15 is pivotally mounted scarifier 31 pivotally connected at 33.

U.S. Pat. No. 2,870,925 to Bernad et al. discloses an apparatus for stocking small logs and picking up same from a stock for loading vehicles and which includes a lower fork consisting of

two prongs made of channel sections 1 having their flanges interconnected by a flat iron 2 welded thereon to form box-sectioned members. At prong ends the flanges of the channel sections 1 are tapered to constitute points 3. The prongs are bent to a sharp angle. Sides 5 have hooks 6, 7 adapted to engage and slide along plate 8. Brackets 9, 10 are secured to plate 8 and have bores adapted to receive shaft 11 for pivotally mounting lugs 12. Lugs 17 on angle iron 16 which interconnects prongs of the upper fork receive a pin 18 pivotally attaching the rod 19 of a piston slidably fitted in a cylinder 20 carrying lug 21 at its opposite end fulcrumed on a pivot pin 22 secured in upper ends of brackets 10. On apron 8 is secured two groups of brackets 25, 26 on which are mounted pivot pins 27, 28 for hinged mounting of corresponding straps consisting of brackets 29, 30. Straps 25, 26 have rods 35 of pistons slidably mounted in cylinders 36 pivoted thereon. Rods 35 are also pivoted in turn at 37 on the upper portion of a support 38. A boom 46 of a crane is pivoted at 55. A cylinder 51 has piston rod 52 which is pivotally mounted to support 38 and hingedly mounted through pin 49 to the support 44. The boom 46 is pivotally attached to support 44.

U.S. Pat. No. 2,908,409 to Hinders et al. discloses a tractor operated rock remover which includes a vertical plate 13 having bracing members 14 and 15 and flanged members 16 having openings 17. The forward ends of beams 12 are pivotally attached at 18 through any one of the openings and in this manner the hydraulically operate members 12 serve to raise or lower the arrangement. Jaw members 27 are pivotally attached at 26 to each of prongs 24. A yoke 33 is attached to piston rod 34 which is attached to a suitable piston which reciprocates within hydraulic cylinder 35. Attached to the cylinder 35 is an ear 38 which is pivotally secured at 39 to a vertically positioned ear 40 which is attached to the bracing member 15. Attached across members 27 is a flat strap 29 to which is attached a centrally positioned post 30 having openings 31 therein for adjustable positioning of the further hydraulic unit. Attached to the post 30 and the members 27

are the bracing rods 32.

U.S. Pat. No. 3,817,567 to Lull discloses a versatile utility carriage for mobile loaders which includes a frame 10, lift forks 23, 25 mounted to shaft 22, a horizontal hydraulic cylinder 27 mounted below shaft 22 and a horizontal hydraulic cylinder 31 mounted above shaft 22. Angled hydraulic cylinders 49 are mounted to plates 14, 40 and 15, 48 and to fingers 47. Vertical hydraulic cylinders 56 are secured to plates 14, 40 and 55 and 15, 48 and 55.

U.S. Pat. No. 4,131,210 to Everson discloses a backshoe jaw attachment which includes a boom 14 pivotally mounted on a tractor portion of the backshoe 10, a linear fluid motor 16 pivotally mounted on a dipper stick 12 adjacent the point of pivotal mounting thereof to boom 14. The motor 16 is connected to a jaw attachment 18. The jaw attachment 18 includes a first jaw 20 affixed to stick 12 and a second jaw 22 pivotally mounted on stick 12 for movement toward and away from first jaw 20.

U.S. Pat. No. 4,285,628 to Jankowski discloses a grapple system mounted on a bucket 11 of a loader tractor 12. The grapple system includes a linkage housing 13 and a tooth frame 20. The housing and the frame are interconnected by a hinge system. The bucket 11 connects by loading arms 9 connecting with the loader tractor 12 and wherein a hydraulic cylinder 8 provides for bucket positioning adjustments. The frame 20 can be rotated to move teeth 15 between open and compressing positions. The teeth 15 and the bucket 11 together substantially enclose an object to be lifted. The housing 13 has mounted therein first and second pivotably and in series connected linkages 17 and 18. One end of a hydraulic cylinder 16 is pivotably connected between first and second linkages 17, 18. The other end of the hydraulic cylinder 16 is pivotally mounted to a pin 7 adjacent housing 13.

U.S. Pat. No. 4,466,494 to Hanson discloses an implement with a gripping arm assembly 26 for a backhoe assembly 10. The backhoe assembly 10 includes a dipper arm 12 and a boom 13 which are supported for articulated movement by a ground supported frame 14 mounted on a tractor 15. The backhoe assembly 10 also includes an

implement means 16 having a housing 18 and an implement tool 19. The implement housing 18 is pivotally connected to the dipper arm 12 by an implement pivot pin 20 for pivotal movement about a horizontal axis. An implement fluid actuator 22 provides selective pivoted movement of the housing 18 through an actuator pivot pin 24. The gripping arm assembly 26 is disposed within the housing 18. The gripping arm assembly 26 includes a gripping arm 28 and a gripping arm fluid actuator 30. The gripping arm 28 is operatively connected to one end of the actuator 30. The other end of the actuator 30 is connected to the housing 18. A clamping arm assembly 44 is provided on the dipper arm 12 and includes a clamping arm 46 pivotally supported by arm pivot pin 48. The clamping arm assembly 44 also includes an arm link 50. A clamping arm fluid actuator 54 is pivotally connected at one end to arm link 50. The other end of the clamping arm fluid actuator 54 is pivotally connected to clamping arm 46.

U.S. Pat. No. 4,516,896 to Freebery discloses an apparatus for removal of paving material which includes an arm member 1 comprised of a forward element 5 and a rear element 3. Rear element 3 is pivotally secured at point P to a mechanized drive unit. At its forward extremity, rear arm element 3 is secured through an elbow-type joint 7 to forward arm element 5 via joint 7. An immobile member 11 is attached to an inboard surface 9 of forward arm stick 12 element 5 and extends from a point several feet above the forward extremity 13 of forward arm element 5 to a point slightly below and behind the forward extremity 13. A blade 15 is attached to the forward extremity 13 of the forward arm element 5. Elements 17 are hydraulic pistons and cylinders associated with the mechanized drive unit. Blade 15 may be slipped under slab 31. The slab 31 may be held between the blade 15 and a bottom plate 33 of the immobile member 11.

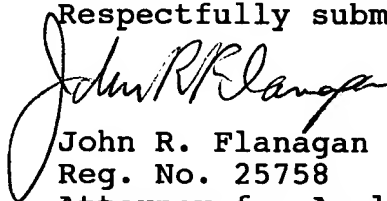
U.S. Pat. No. 4,808,062 to Bare discloses an apparatus for picking up rocks which includes a frame comprised of a forward channel 17 and a rear channel 75 affixed in a parallel relation to a first side bar 23 and a second side bar 23a. Affixed to and

extending downward from the rear bar 75 are fixed jaw bars 25 with ends narrowing and angling forward in a fixed position to form fixed tines 27. A jaw strengthening bar 29 is affixed to the fixed jaw bar 25. A corresponding jaw strengthening bar 29a is affixed in a similar manner to the fixed jar bar 25 on the far end of the rock lift 10 which cooperates with bar 29 to hold bars 25 in a fixed position. A first hinge bar 31 is rotatably attached on the inside of the first side bar 23 at pivot pin 37 and a second hinge bar 31a is attached in a like manner to the second side bar 23a. Moveable tines 33 are affixed at intervals along the lower front side of square tubing 77 perpendicular to first hinge bar 31 and second hinge bar 31a. Ends of moveable tines 33 narrow and angle rearward to form claws 35. Fixed tines 27 and claws 35 cooperate in a grasping motion. A power mechanism is provided by a hydraulic cylinder 49 connected to a link 53 and to a release bar 43. The link 53 is connected to a clevis 57. The clevis 57 is fixed to tubing 77. The release bar 43 is attached at one end to clevis 39. The clevis 39 is affixed to the fixed jaw bars 25. The release bar 43 is attached at the other end to a front of the rock picker.

PCT/CH89/00027 to Ruf discloses stone tongs for excavators which include two gripper arms 1 which can be mounted on an ordinary excavator shovel 2 and hydraulically controlled.

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Respectfully submitted,


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